

**Utilities**

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MEMORANDUM

DATE: April 13, 2022

TO: Water Commission

FROM: Michael Neale, MSc, Water Resources Engineer

RE: **March 2022 Water Resources Division Staff Report**

Purpose

This memorandum is intended to update the Water Commission on water resource conditions for the City of Fort Collins Water Utility (Water Utility) over the month of March and provide updated future outlook information. For additional information, please refer to the City's website:

<https://www.fcgov.com/utilities/water-status>

Water Resources Summary

Supply and Demand Projections for the remainder of WY2022

- Water Supply – During the month of March, water supply consisted of 62% from Horsetooth supplies and 38% from the Poudre. Diversion from the Poudre returned on March 7th after the completion of the sediment removal work at the intake.
- Water Demand- Demands within the Water Utility service area for the month of March were slightly below projected, at 95% of projected demand. Please refer to the attached graphs and tables.

Weather: <https://climate.colostate.edu/>

Measured at the Fort Collins weather station 053005 along with average normals from 1991-2020:

- Mean daily high temperature recorded for the month: 56.1 °F.
 - 30-year average daily high temperature for the month is: 56.4 °F.
- Total recorded monthly precipitation: 0.97 inches.
 - 30-year average precipitation for the month: 1.31 inches.

Reservoir Storage: Northern allocated an initial 50% quota in November. Project reserves are 90% of full quota at this time. Conditions are promising for an additional 20% to be confirmed at the Northern Water Board meeting on April 14th. As of April 1st and presented in the Northern District Storage and Delivery Report:

- Colorado-Big Thompson project reservoirs (Granby, Carter, and Horsetooth): 70% full.
- Horsetooth Reservoir: 96% full.
- Joe Wright Reservoir: 72% full (114% of average based on 14 years of data).



Snowpack: Natural Resources Conservation Service SNOTEL program percent of 1991-2020 median snow water equivalent as of 04/12/2021:

- Upper Colorado Basin: 94% of median.
- South Platte Basin: 90% of median.
- Poudre Basin 5-site average snow water equivalent is currently 18.4 inches, 99% of the 1991-2020 combined median.

Poudre River flow: Northern Water forecasts an Apr-Jul most probable streamflow of 93% of average. See Snowpack and Streamflow Comparisons report attached. Graphical data for the Poudre River is available on-line at:

- Cache La Poudre River at the Canyon Mouth
<https://dwr.state.co.us/Tools/Stations/CLAFTCCO?params=DISCHRG>
- Cache La Poudre River at Fort Collins
<https://dwr.state.co.us/Tools/Stations/CLAFORCO?params=DISCHRG>

Drought Monitors:

- Larimer County and Colorado https://climate.colostate.edu/drought_info.html
Larimer County and upper South Platte basin are abnormally dry at this time.
- Colorado and the USA <https://droughtmonitor.unl.edu/>
The Colorado River basin remains in a drought.

Climate Outlook: <https://www.cpc.ncep.noaa.gov/>

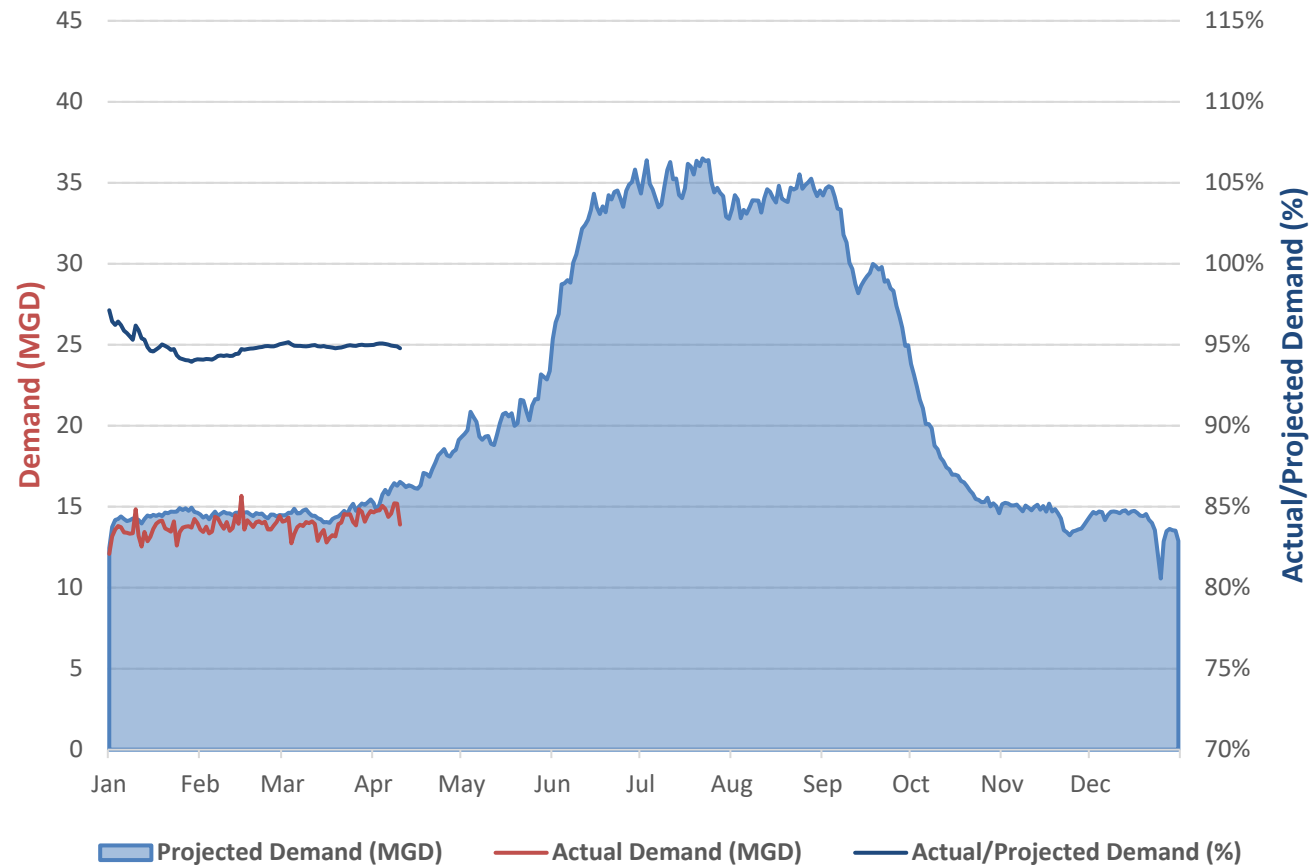
National Oceanic and Atmospheric Administration (NOAA) climate outlooks for the northern Front Range and northern mountains, over the next three months:

- Leaning below normal precipitation
- Likely above normal temperature.

Other Water Supply Considerations:

- Water Treatment managers and WRD have projected our total 2022 water year diversion off the Poudre at 60% of average. This due to potential burn area impacted runoff from summer rains that can make Poudre supplies undesirable for treatment.
- The Colorado River basin remains in a significant drought. Utilities staff will continue to monitor conditions throughout the year.

2022 Fort Collins Utilities Treated Water Demands

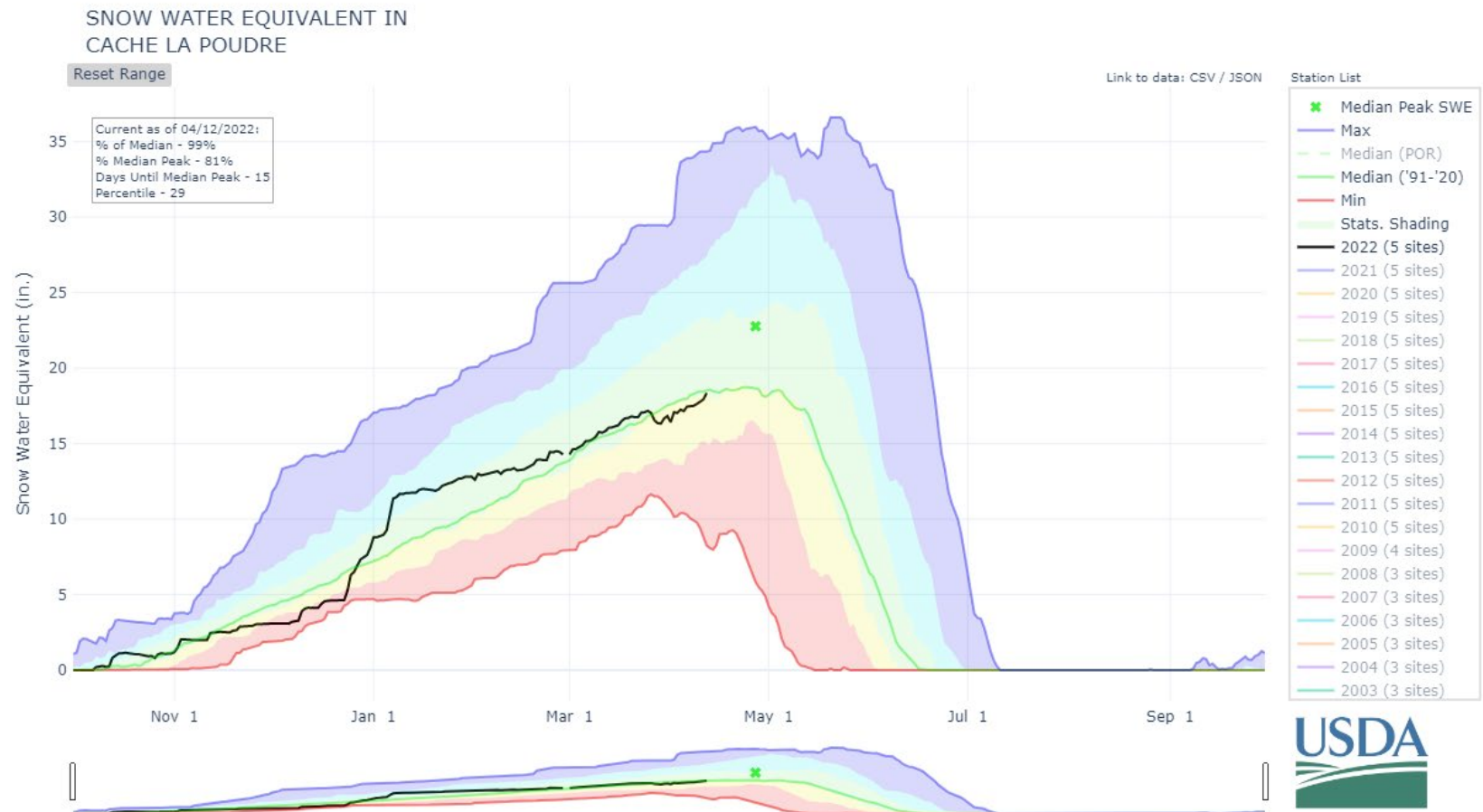




**City of Fort Collins Utilities
Treated Water Monthly Summary
2022**

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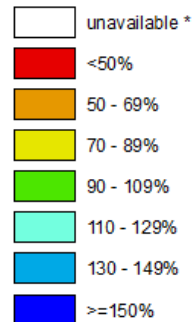
Upper Cache la Poudre Basin SNOTEL - Daily time series for water year 2022



Apr 12, 2022

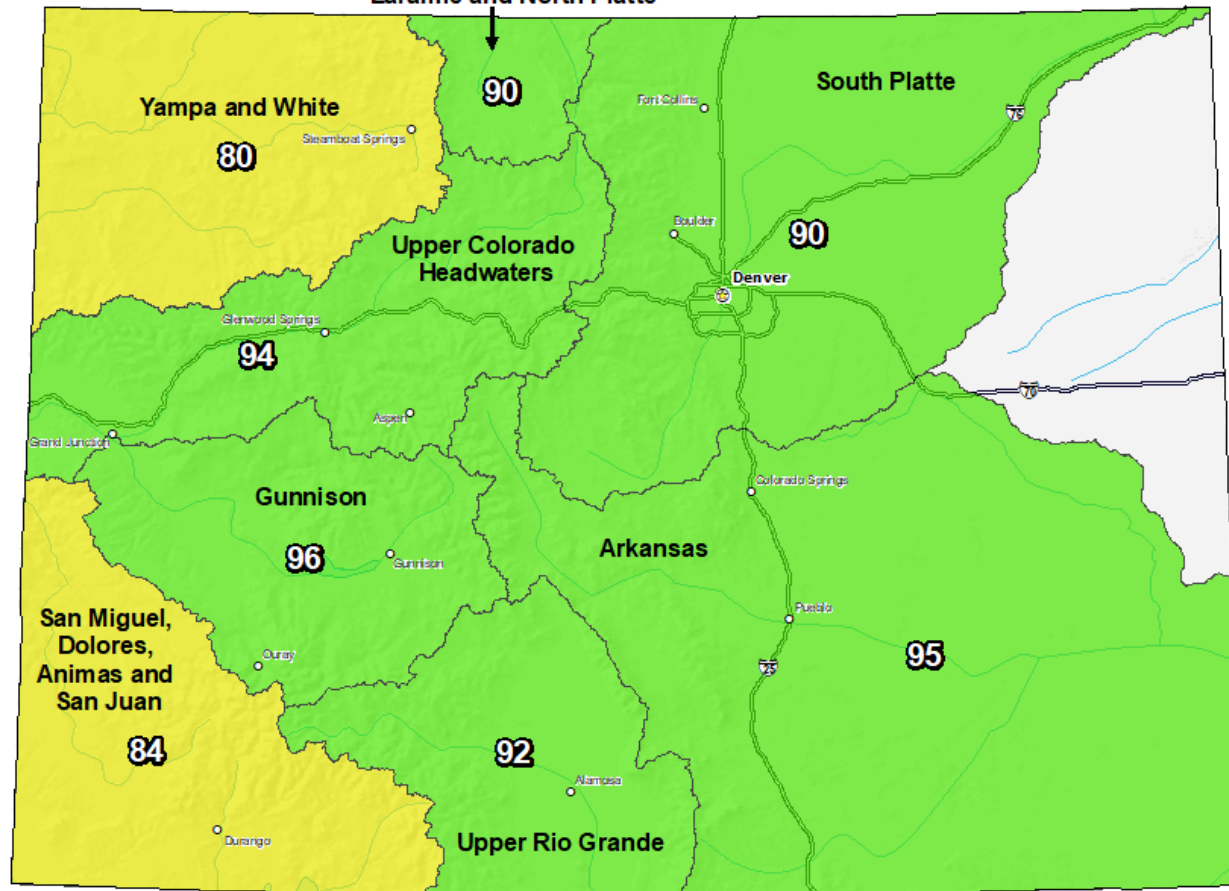
Colorado
SNOTEL Current Snow Water Equivalent (SWE) % of Normal
Laramie and North Platte

Current Snow Water
Equivalent (SWE)
Basin-wide Percent
of 1991-2020 Median



* Data unavailable at time
of posting or measurement
is not representative at this
time of year

*Provisional Data
Subject to Revision*



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<https://www.nrcs.usda.gov/wps/portal/wcc/home/>

U.S. Drought Monitor Colorado

April 5, 2022


(Released Thursday, Apr. 7, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	82.85	31.94	4.32	0.13
Last Week 03-29-2022	0.00	100.00	82.85	33.50	7.11	0.13
3 Months Ago 01-04-2022	0.00	100.00	95.49	67.08	22.25	0.00
Start of Calendar Year 01-04-2022	0.00	100.00	95.49	67.08	22.25	0.00
Start of Water Year 09-28-2021	12.72	87.28	46.42	26.30	15.05	3.91
One Year Ago 04-06-2021	0.00	100.00	92.31	61.69	32.13	14.65

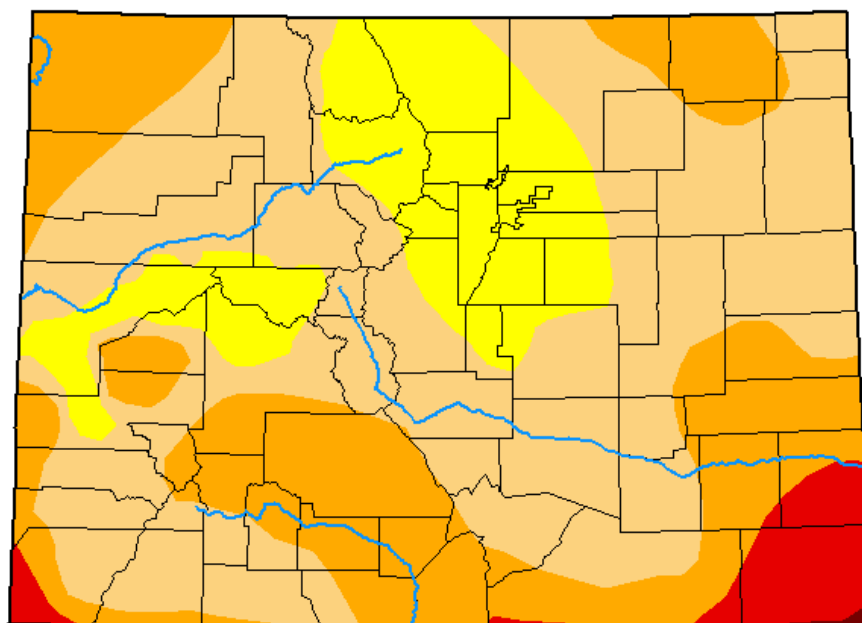
Intensity:

 None	 D2 Severe Drought
 D0 Abnormally Dry	 D3 Extreme Drought
 D1 Moderate Drought	 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor Western U.S.

April 5, 2022

(Released Thursday, Apr. 7, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.75	95.25	89.96	74.67	31.06	2.55
Last Week 03-29-2022	5.57	94.43	88.93	69.91	29.67	2.50
3 Months Ago 01-04-2022	3.68	96.32	89.29	64.90	23.85	3.94
Start of Calendar Year 01-04-2022	3.68	96.32	89.29	64.90	23.85	3.94
Start of Water Year 09-28-2021	2.21	97.79	89.60	75.38	52.46	18.40
One Year Ago 04-06-2021	9.62	90.38	76.04	59.49	40.80	20.71

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

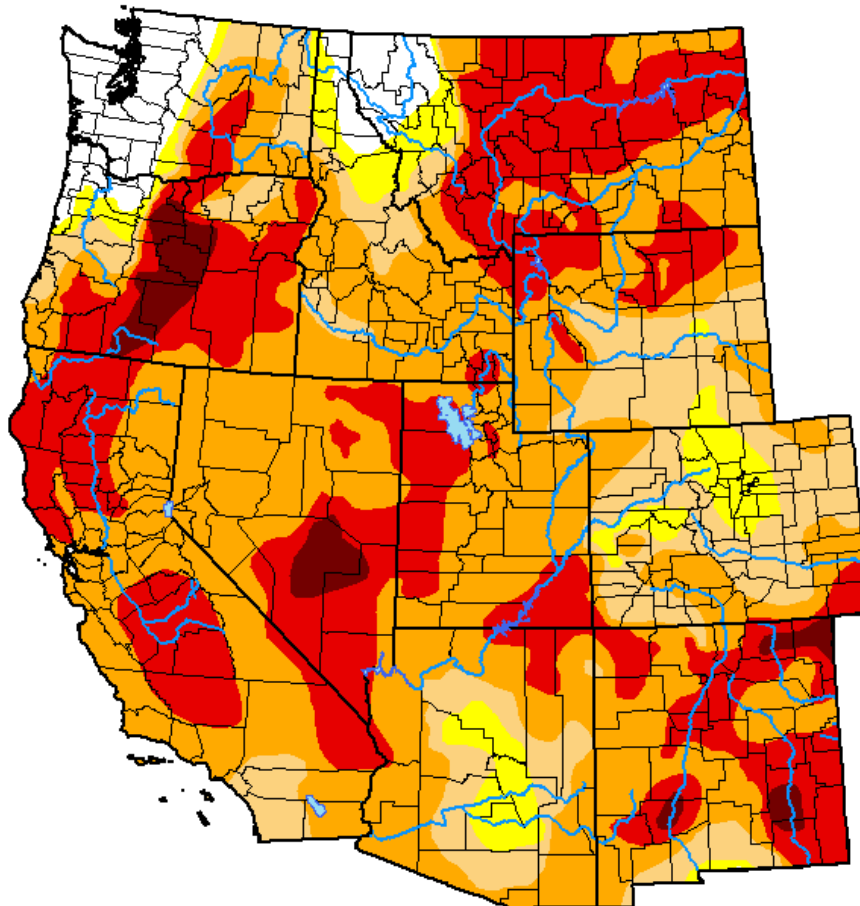
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Author:

Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu



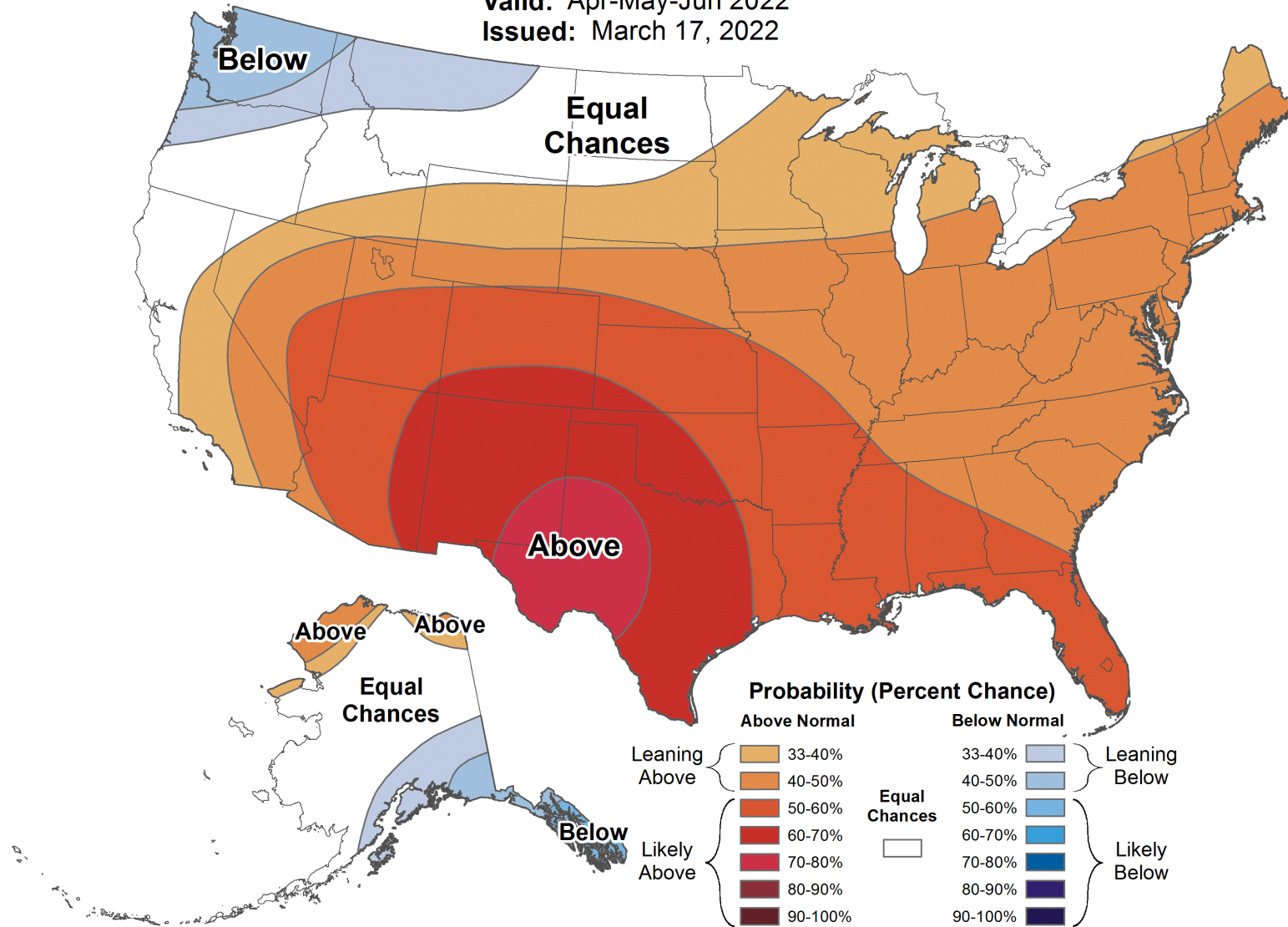


Seasonal Temperature Outlook



Valid: Apr-May-Jun 2022

Issued: March 17, 2022



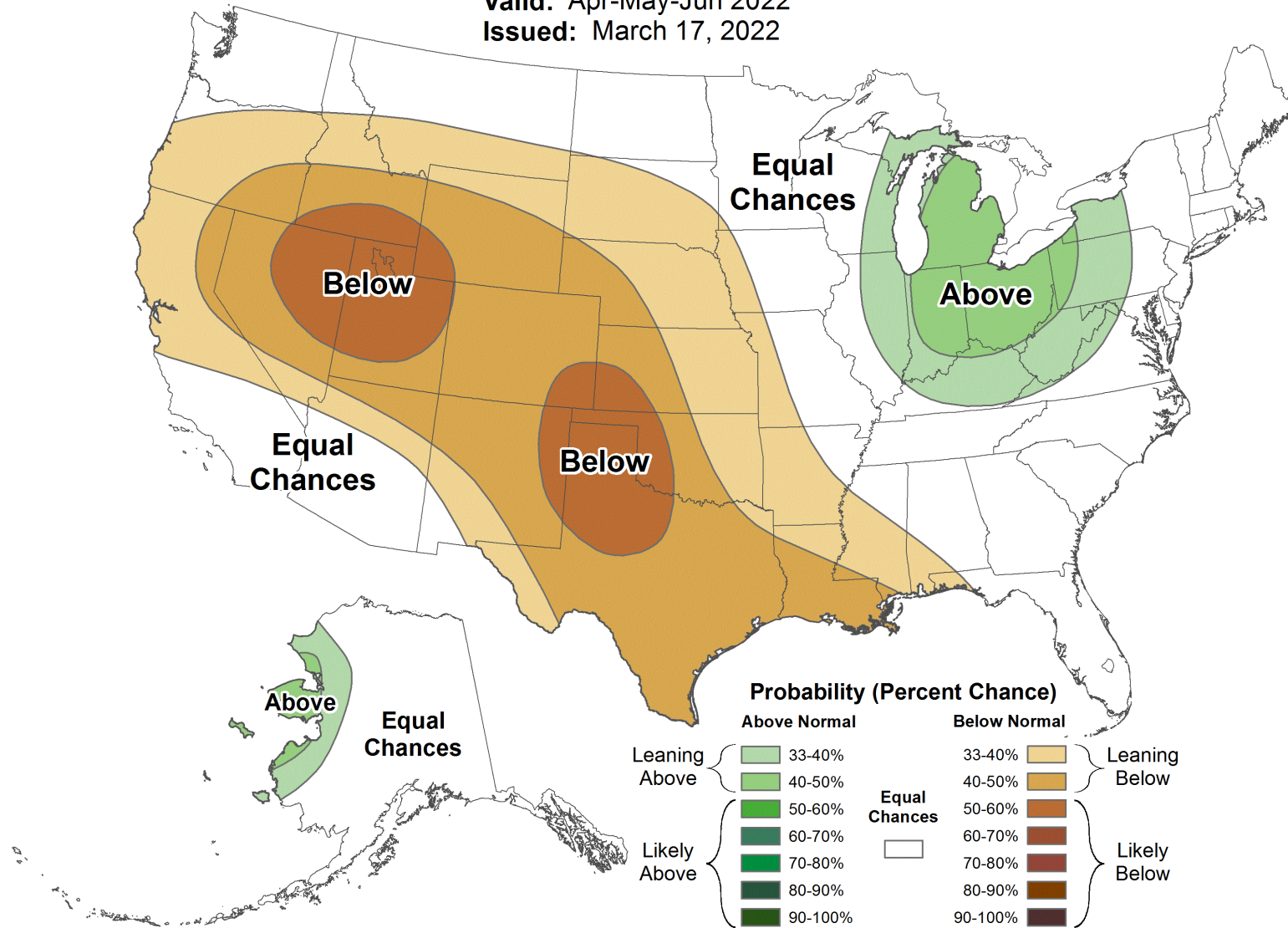


Seasonal Precipitation Outlook



Valid: Apr-May-Jun 2022

Issued: March 17, 2022



Snowpack and Streamflow Comparisons April 1, 2022



Snow Water Content

% of Average

Colorado's Statewide Snowpack	93%
Upper Colorado River ⁽¹⁾	88%
South Platte Tributaries ⁽²⁾	96%

Snow-Water Content Comparisons (inches)

Watershed	April 1, 2022 Snow-Water Content			April 1 Comparative Snow-Water Content			
	2022	Average	% Avg	2021	2020	2019	2002
Blue River	11.7	13.9	85%	88%	112%	138%	69%
Upper Colorado River	13.8	15.6	89%	88%	116%	103%	64%
Willow Creek	10.8	10.9	99%	82%	111%	124%	62%
Fraser River	11.1	13.7	80%	98%	122%	113%	61%
Poudre River	12.6	13.7	92%	99%	109%	108%	65%
Big Thompson River	13.8	14.3	96%	103%	119%	111%	62%
St. Vrain River	11.1	10.9	102%	110%	123%	115%	49%
Boulder Creek	10.5	11.4	92%	109%	126%	110%	56%

Apr-Jul Maximum, Minimum and Most Probable Streamflow Forecasts (1000 af)

Watershed	Forecast Minimum	Most Probable	Forecast Maximum	Apr-Jul Avg ⁽³⁾	Most Prob % Avg
Blue River	159	224	288	283	79%
Upper Colorado River	156	196	246	226	87%
Willow Creek	33	48	63	50	96%
Fraser River	67	96	125	118	81%
Poudre River	130	213	296	230	93%
Big Thompson River	49	84	119	91	92%
St. Vrain River	53	87	121	90	97%
Boulder Creek	36	51	67	54	94%
South Platte Tributaries	--	435	--	465	94%

Precipitation within District Boundaries ⁽⁴⁾

	Totals	Average	% Average
March	0.97	1.10	88%
Nov - Mar	2.81	2.91	96%

(1) Includes the Colorado, Willow Creek, Fraser and Blue River Watersheds

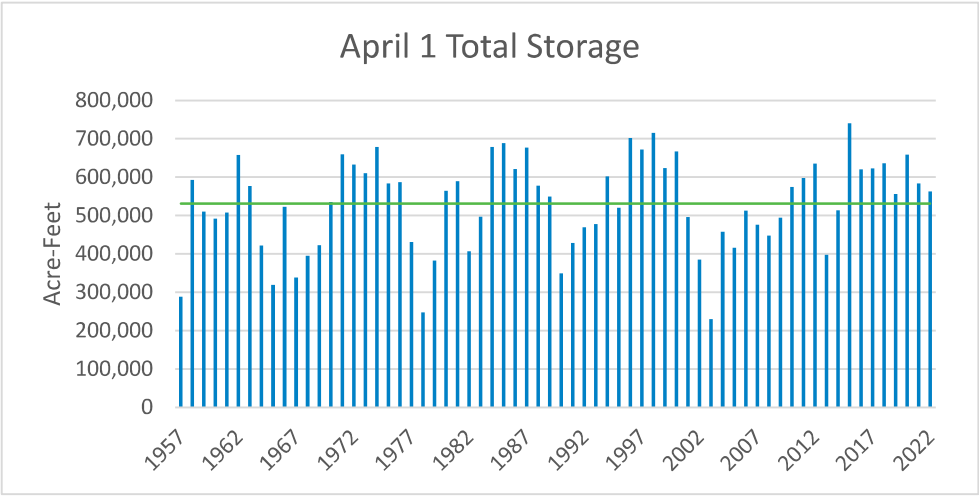
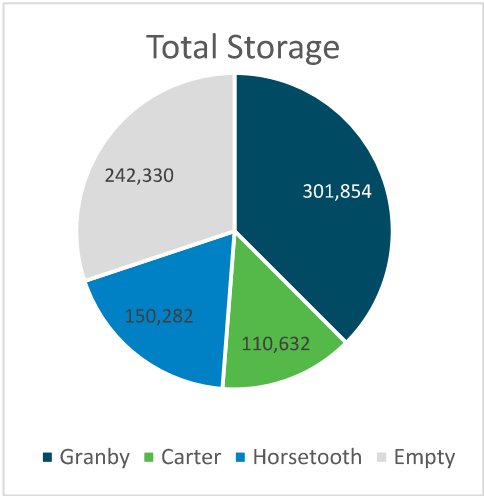
(2) Includes the Poudre, Big Thompson, Saint Vrain and Boulder Creek Watersheds

(3) Average for the period 1991-2020

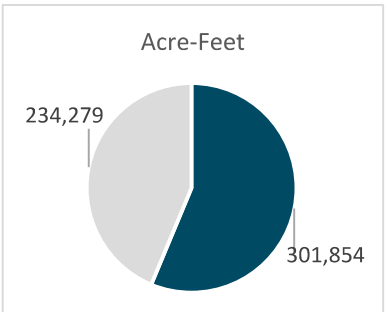
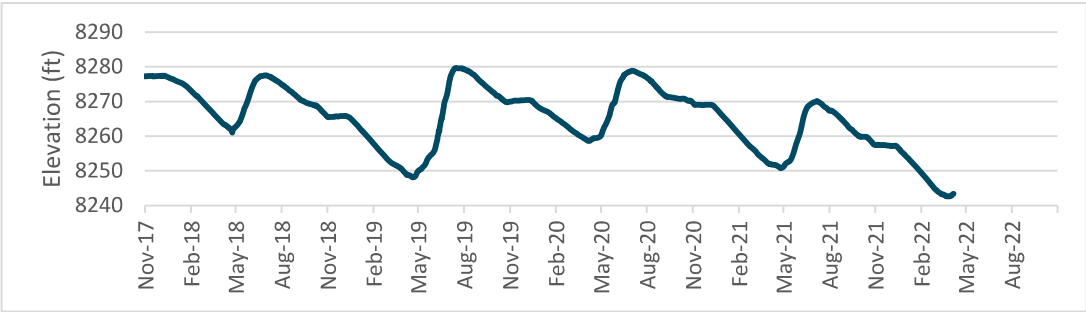
(4) Computed using CoCoRaHS and Northern Water Stations

C-BT Project Storage

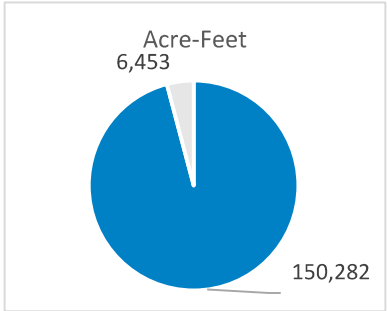
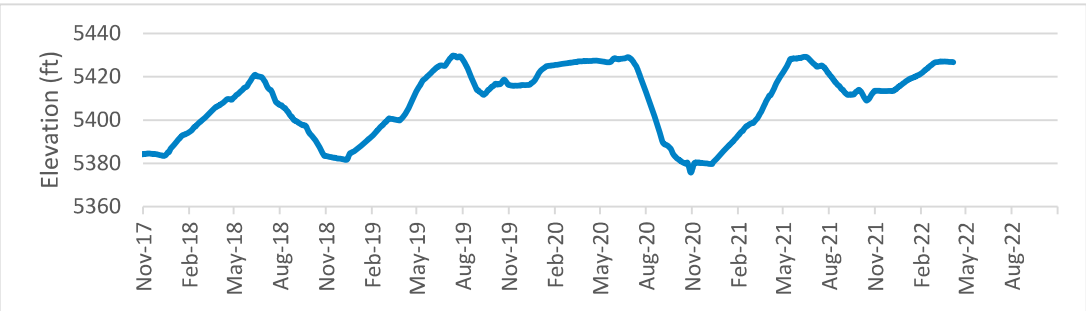
April 1, 2022



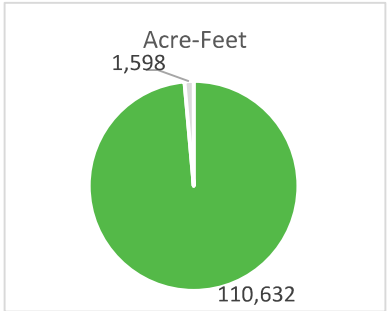
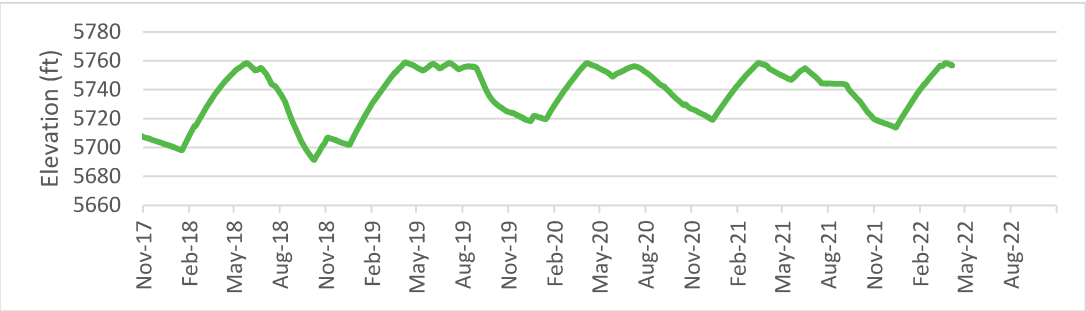
Lake Granby Storage in Lake Granby decreased 11,389 acre-feet last month



Horsetooth Reservoir Storage in Horsetooth Reservoir increased 399 acre-feet last month



Carter Lake Storage in Carter Lake increased 6,865 acre-feet last month

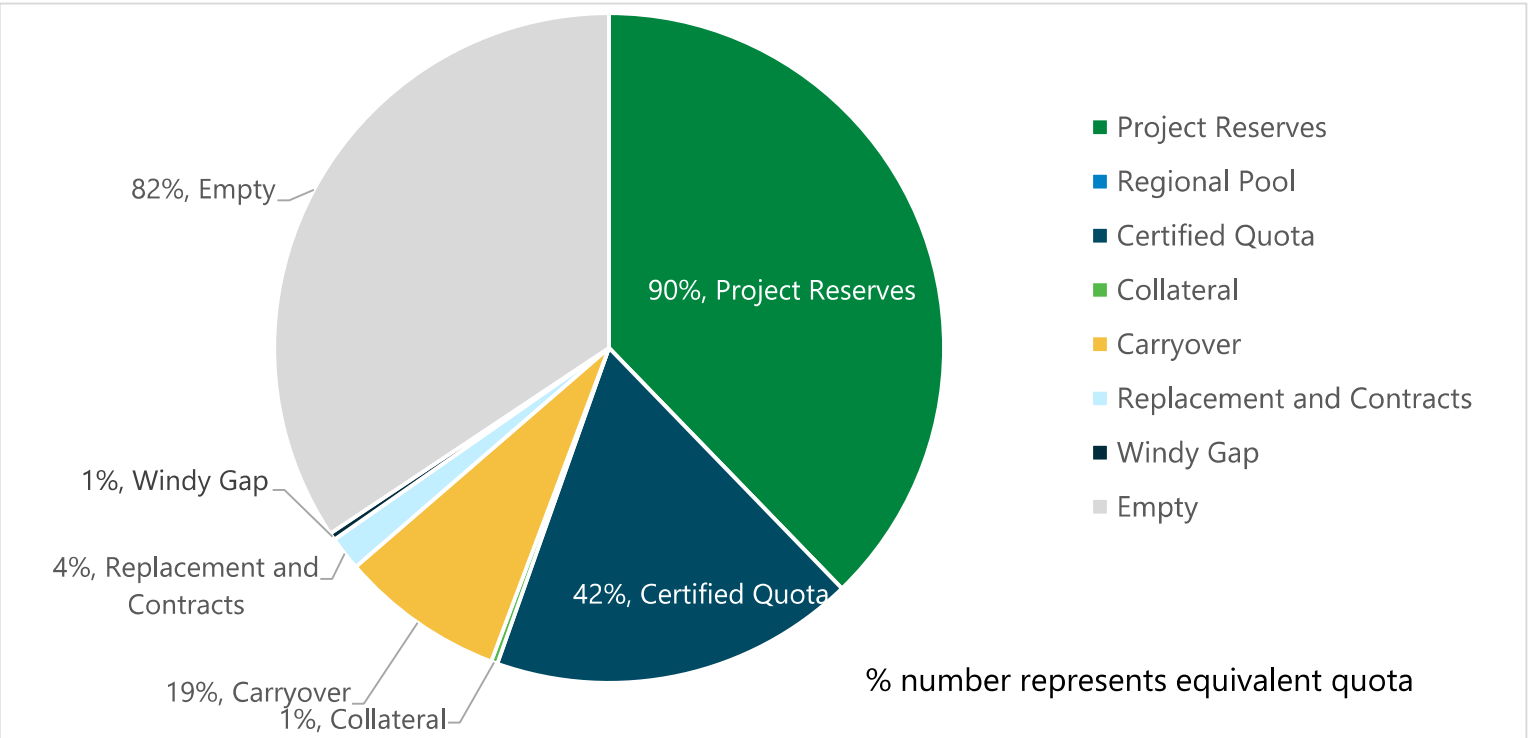


C-BT Project Allocated Water

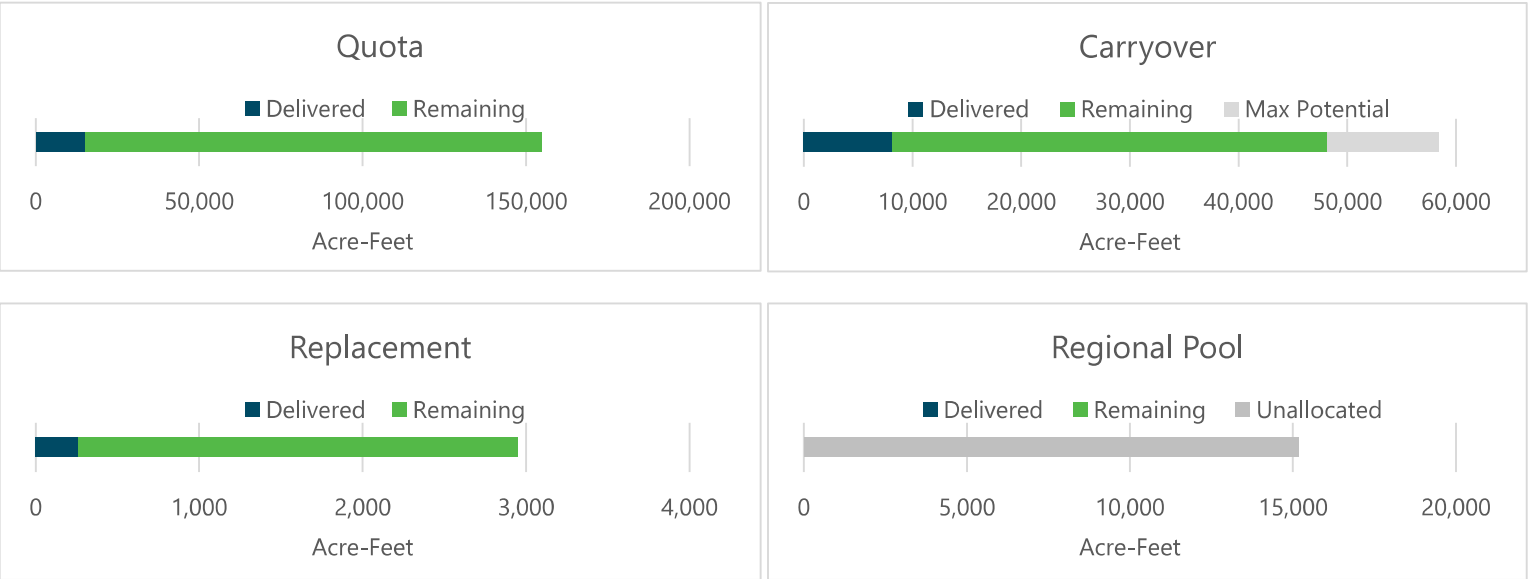
April 1, 2022



C-BT Active Storage



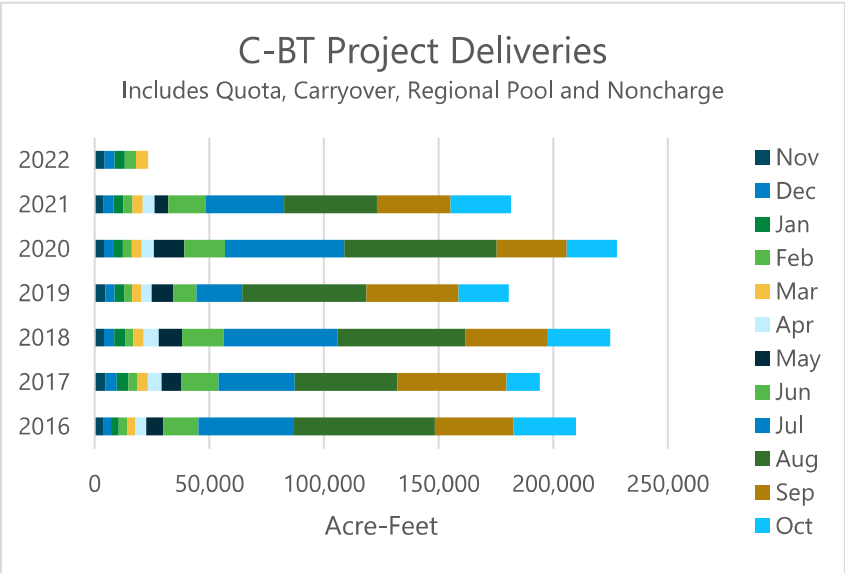
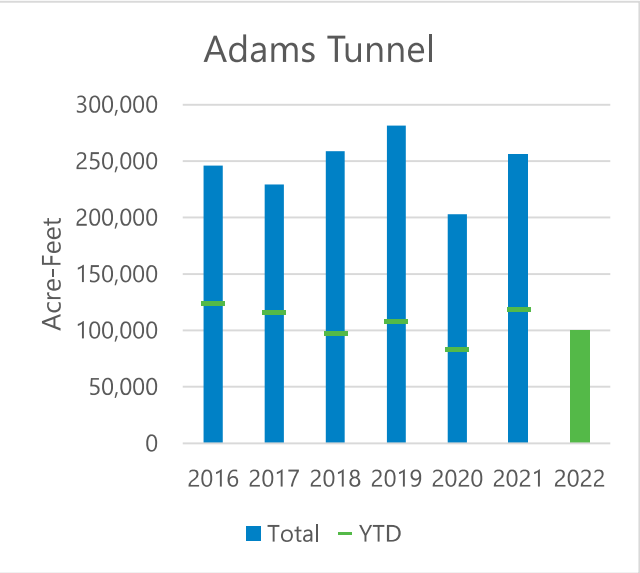
C-BT Delivery Obligations



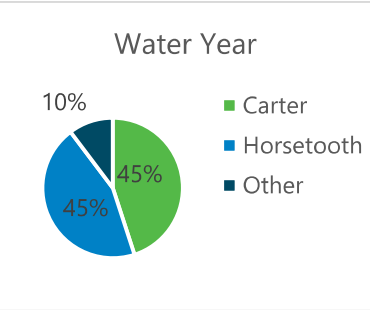
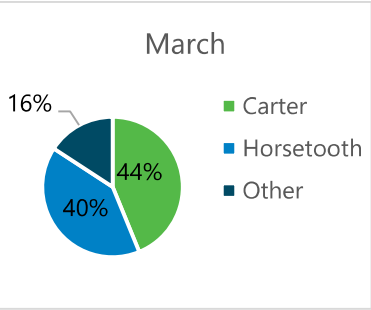
- Notes:**
- 1) Quota set at 50%
 - 2) Carryover - Carryover will not be certified until April 30. Until that date, the Maximum Potential Carryover is reported for Carryover so that adequate supplies are set aside to fulfill all potential obligations.
 - 3) Regional Pool - Additional water accrued to the Regional Pool on April 30, 2022. There is 15,159.9 Acre-Feet in the Regional Pool for WY 2022.

C-BT Project Deliveries

April 1, 2022



Deliveries by Area



Deliveries by Use

